PATENT ABSTRACTS OF JAPAN

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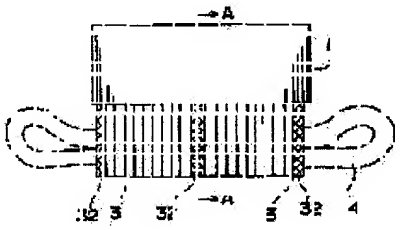
(71)Applicant : **CHODENDO HATSUDEN KANREN KIKI ZAIRYO GIJUTSU KENKYU KUMIAI**
(72)Inventor : **HIGASHIMURA YUTAKA**
TAKAMURA MAKOTO
TAKAHASHI MIYOSHI
SATO YUKINORI
HARUTA TAKASHI
YAGI YASUOMI

(54) SUPERCONDUCTING GENERATOR AND STATOR PART

(57)Abstract:
PURPOSE: To provide means for securely grounding a stator corona shield without installing another means while controlling the increase in tooth eddy-current loss due to a large magnetic flux.
CONSTITUTION: A semi-conductive plate tooth parts 32 are installed in at least one part of axial arrangement distributions of a generator of a stator tooth made of a non-metallic material. Also, if necessary, a semi-conductive elastic cushion is inserted between a stator coil 4 and a tooth 3, and/or a corona shield 1 is fixed on the tooth 3 using a semi-conductive adhesive. By inserting the semi-conductive tooth parts having the constant number of parts corresponding to a magnetic flux between non-conductive teeth or into tooth ends, a stator coil can be securely grounded while controlling the increase in tooth eddy- current loss. By using the semi-conductive elastic cushion and the semi- conductive adhesive, a ground is secured against, the rush current or the deterioration with age, and the reliability is improved.



LEGAL STATUS

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CLAIMS

[Claim(s)]
[Claim 1] The superconductivity generator characterized by arranging the tabular tooth part parts of the generator shaft-orientations array of the aforementioned tooth part which contain a half-conductivity material in part at least in the superconductivity generator which has the stator equipped with the magnetic-shielding member of a cylindrical shape, the tooth part which is fabricated by tabular by the non-conducting material, and a laminating is carried out to the wall of the aforementioned magnetic-shielding member, and is fixed to it, and the stator coil which is arranged between these tooth parts and has a corona shield layer in the outermost layer.
[Claim 2] The superconductivity generator characterized by making the tabular tooth part parts containing the aforementioned half conductivity material into what has an elastic modulus higher than other aforementioned tabular tooth part parts in a claim 1.

[Claim 3] The superconductivity generator characterized by constituting the tabular tooth part parts containing the aforementioned half conductivity material by the carbon fiber reinforced plastics in a claim 1.
[Claim 4] The superconductivity generator characterized by fabricating the aforementioned carbon fiber reinforced plastics in a claim 3 using the carbon-fiber textiles which carried out the laminating to generator shaft orientations.
[Claim 5] The superconductivity generator characterized by arranging the grain direction of each carbon-fiber textiles in radial and its right-angled orientation of a profile superconductivity generator stator further in a claim 4.
[Claim 6] The superconductivity generator characterized by for a carbon fiber reinforced plastics constituting the tabular tooth part parts containing the aforementioned half conductivity material in a claim 1, and constituting other aforementioned tabular tooth part parts by fiberglass reinforced plastics.
[Claim 7] It is the superconductivity generator which the tabular tooth part parts containing the aforementioned half conductivity material come to carry out the laminating of two or more fiber textiles in a claim 1, and at least one layer of these fiber textiles is half-conductivity fiber textiles, and is characterized by others being non-conducting fiber textiles.
[Claim 8] The superconductivity generator characterized by using carbon-fiber textiles at half-conductivity fiber textiles, and using a glass fiber fabric for non-conducting fiber textiles in a claim 7.
[Claim 9] The superconductivity generator characterized by constituting all of the aforementioned tooth parts with the tabular tooth part parts containing a half-conductivity material in a claim 1.
[Claim 10] The superconductivity generator characterized by fixing the stator coil which has the aforementioned corona shield layer, and the aforementioned tooth part in a claim 1 using the adhesive material of half-conductivity.
[Claim 11] The superconductivity generator characterized by inserting the cushion which consists of the elastic body of half-conductivity in a claim 1 between the stator coils and the aforementioned tooth parts which have the aforementioned corona shield layer.
[Claim 12] The superconductivity generator further characterized by fixing the aforementioned stator coil, the aforementioned half conductivity elastic body cushion, and the aforementioned tooth part using the adhesive material of half-conductivity in a claim 11.
[Claim 13] The superconductivity generator stator parts characterized by the tabular tooth part parts for the stators of the machine from a superconductivity equipped with the magnetic-shielding member of a cylindrical shape, the tooth part which is fabricated by tabular by the nonmetal material, and a laminating is carried out to the wall of the aforementioned magnetic-shielding member, and is fixed to it, and the stator coil which is arranged between these tooth parts and has a corona shield layer in the outermost layer having half-conductivity.
[Claim 14] The superconductivity generator stator parts characterized by giving a high elastic modulus to the tabular tooth part parts which have the aforementioned half conductivity in a claim 13.
[Claim 15] The superconductivity generator stator parts characterized by the tabular tooth part parts which have the aforementioned half conductivity in a claim 13 being constituted by the carbon fiber reinforced plastics.
[Claim 16] The superconductivity generator stator parts characterized by being the textiles which the laminating was carried out to generator shaft orientations when the aforementioned carbon fiber was assembled as a generator, and were arranged in the profile radial and its right-angled orientation within the generator shaft right-angled cross section in the claim 15.
[Claim 17] They are the superconductivity generator stator parts which the tabular tooth part parts which have the aforementioned half conductivity consist of the fiber reinforced plastics which carried out the laminating of two or more fiber textiles in a claim 13, and at least one layer of these fiber textiles is half-conductivity fiber textiles, and are characterized by others being non-conducting fiber textiles.
[Claim 18] The superconductivity generator stator parts characterized by having used carbon-fiber textiles at half-conductivity

fiber textiles, and using a glass fiber fabric for non-conducting fiber textiles in a claim 17.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the cross section which cut the upper half of a superconductivity generator stator in accordance with the generator shaft.
[Drawing 2] It is the cross section cut along with the A-A profile line of drawing 1 .
[Drawing 3] It is structure explanatory drawing of the half-conductivity tooth part which used non-conducting fiber for parts for other thickness by a part of thickness within 1 block using half-conductivity fiber.
[Drawing 4] It is the same cross section as the drawing 2 at the time of inserting a half-conductivity elastic body cushion into a slot.
[Description of Notations]
1 Magnetic-Shielding Member
3 Tooth Part
4 Stator Coil
7 Fiber of FRP
8 Half-Conductivity Elastic Body Cushion
31 Non-conducting FRP Tooth Part Parts
32 Half-Conductivity FRP Tooth Part Parts
71 It is Vertical Fiber to Slot Side.
72 It is Vertical Fiber to Magnetic-Shielding Member Internal Surface.

[Translation done.]

* NOTICES *

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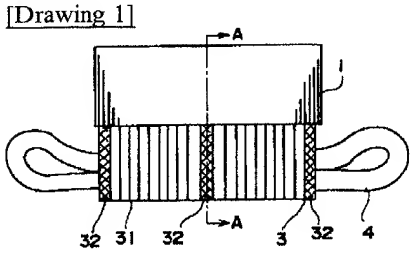
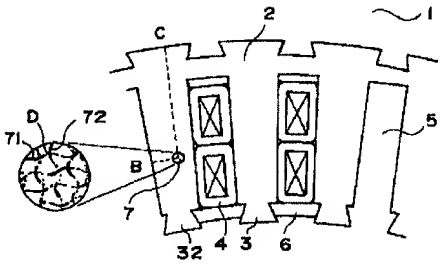
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

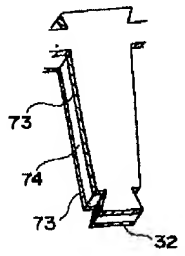
[Drawing 1]



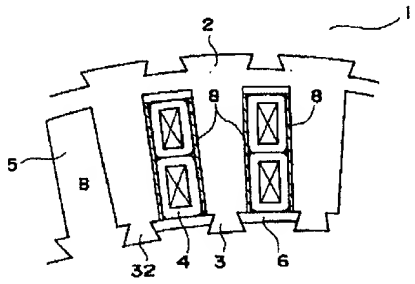
[Drawing 2]



[Drawing 3]



[Drawing 4]



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DERWENT-ACC-NO: 1994-204837
DERWENT-WEEK: 199425

TITLE: Superconducting generator stator with improved corona shielding - has
cylindrical magnetic shield and tooth having non-conductive and semi-conductive
FRP parts for decreased eddy loss NoAbstract

PATENT-ASSIGNEE: CHODENDO HATSUDEN KANREN KIKI ZAIRYO [CHODN]

PRIORITY-DATA: 1992JP-0283099 (October 21, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06141531 A	May 20, 1994	N/A	005	H02K 055/00

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP06141531A	N/A	1992JP-0283099	October 21, 1992

INT-CL_(IPC): H02K055/00
ABSTRACTED-PUB-NO: JP06141531A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1/4

DERWENT-CLASS: X11

EPI-CODES: X11-H05;

DERWENT-ACC-NO: 1992-386424
DERWENT-WEEK: 199247

TITLE: Stator for superconductive motor - has oscillation absorbing material
consisting of non-magnetic substance in boundary portion of insulation material
and teeth NoAbstract

PATENT-ASSIGNEE: CHODENDO HATSUDEN KANREN KIKI ZAIRYO [CHODN]

PRIORITY-DATA: 1991JP-0047955 (March 13, 1991)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 04285462 A	October 9, 1992	N/A	004	H02K 055/04

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP04285462A	N/A	1991JP-0047955	March 13, 1991

INT-CL_(IPC): H02K005/24; H02K055/04
ABSTRACTED-PUB-NO: JP04285462A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1/3

DERWENT-CLASS: X11

EPI-CODES: X11-H05; X11-J07X;